

CLAIMS

1. An apparatus for generating Oxygen, comprising:  
a vessel; and  
an aqueous, Oxygen producing solution contained in the  
5 vessel, wherein a resulting waste solution is at least non-toxic and wherein the resulting waste solution is at least not an environmental hazard.
2. The apparatus of Claim 1, wherein the aqueous,  
10 Oxygen producing solution further comprises a reactant selected from the group consisting of Sodium Percarbonate ( $2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$ ) or Sodium Perborate ( $\text{NaBHO}_3$ ) dissolved in water.
3. The apparatus of Claim 1 or 2, wherein the aqueous,  
15 Oxygen producing solution further comprises a water-soluble catalyst, wherein the water-soluble catalyst is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.
- 20 4. The apparatus of Claims 1, wherein the aqueous, Oxygen producing solution further comprises a catalyst of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

5. The apparatus of Claims 3, wherein the water-soluble catalyst further comprises a mixture of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

5 6. The apparatus of Claims 1, wherein the aqueous, Oxygen producing solution further comprises a catalyst of metal oxide.

7. The apparatus of Claims 3, wherein the water-soluble  
10 catalyst further comprises a metal oxide.

8. The apparatus of Claim 1, wherein the apparatus further comprises a humidifier at least configured to be coupled to the vessel.

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9. The apparatus of Claim 8, wherein the apparatus further comprises a carrier tube at least configured to be attached the humidifier.

20 10. An apparatus for generating Oxygen, comprising:  
a vessel to at least contain an aqueous reaction; and  
a water-soluble reactant to at least be used as an Oxygen producing reactant in the aqueous reaction, wherein the water-soluble reactant is at least be non-toxic, at least not an

environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having long shelf-life.

11. The apparatus of Claim 10, wherein the water-soluble  
5 reactant further comprises a reactant selected from the group consisting of Sodium Percarbonate ( $2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$ ) or Sodium Perborate ( $\text{NaBHO}_3$ ) dissolved in water.

12. The apparatus of Claim 10 or 11, wherein apparatus  
10 further comprises a water-soluble catalyst, wherein the water-soluble catalyst is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having long shelf-life.

13. The apparatus of Claims 10, wherein apparatus  
15 further comprises a catalyst of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

14. The apparatus of Claims 12, wherein the water-  
20 soluble catalyst further comprises a mixture of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

15. The apparatus of Claims 10, wherein apparatus further comprises a catalyst of metal oxide.

16. The apparatus of Claims 12, wherein the water-soluble catalyst further comprises a metal oxide.

17. The apparatus of Claim 10, wherein the apparatus  
5 further comprises a humidifier at least configured to be coupled to the vessel.

18. The apparatus of Claim 17, wherein the apparatus further comprises a carrier tube at least configured to be  
10 attached the humidifier.

19. An apparatus for generating Oxygen, comprising:  
a vessel to at least contain an aqueous reaction;  
a water-soluble powder or liquid at least to be used as a  
15 reactant in the aqueous reaction, wherein the water-soluble powder is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life; and  
a water-soluble catalyst, wherein the water-soluble  
20 powder is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

20. The apparatus of Claim 19, wherein the water-soluble  
25 powder or liquid further comprises a reactant selected from

the group consisting of Sodium Percarbonate ( $2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$ ) or Sodium Perborate ( $\text{NaBHO}_3$ ) dissolved in water.

21. The apparatus of Claim 19 or 20, wherein the water-  
5 soluble powder or liquid further comprises a water-soluble catalyst, wherein the water-soluble catalyst is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

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22. The apparatus of Claims 19, wherein the water-soluble catalyst further comprises a catalyst of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

15 23. The apparatus of Claims 21, wherein the water-soluble catalyst further comprises a mixture of Manganese Dioxide ( $\text{MnO}_2$ ) and Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ).

24. The apparatus of Claims 19, wherein water-soluble  
20 catalyst further comprises a catalyst of metal oxide.

25. The apparatus of Claims 21, wherein the water-soluble catalyst further comprises a metal oxide.

26. The apparatus of Claim 19, wherein the apparatus further comprises a humidifier at least configured to be coupled to the vessel.

5        27. The apparatus of Claim 26, wherein the apparatus further comprises a carrier tube at least configured to be attached the humidifier.

28.        A method for operating an Oxygen producing  
10 generator, comprising:

filling a vessel with water;

dissolving a water-soluble powder or liquid at least used as a Oxygen producing reactant, wherein the water-soluble powder is at least non-toxic, at least not an environmental  
15 hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

29. The method of Claim 28, wherein a the method further comprises:

20        dissolving a water-soluble catalyst after the water-soluble powder is dissolved, wherein the water-soluble powder is at least non-toxic, at least not an environmental hazard, at least not an explosive hazard, at least not a fire hazard, and at least having a long shelf-life.

30. The method of Claim 28, wherein a the method further comprises:

dissolving a water-soluble catalyst simultaneously with the water-soluble powder, wherein the water-soluble powder is  
5 at least non-toxic, at least not an environmental hazard, at least configured not an explosive hazard, at least not a fire hazard, and at least having long shelf-life.